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None

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(54) Metering unit for panelboards

(57) A metering unit (10) which can be plugged onto the busbars of panelboards comprises a current meter (12), a volt meter (13) and respective switches (14, 15) connected thereto. The metering unit components are accommodated within a housing (11) having plug-on connector members (19) located at one side thereof and connected to the volt meter (13) through its associated switch (15) and a terminal block (20) located at the other side thereof and connected to the current meter (12) through its associated switch (14).

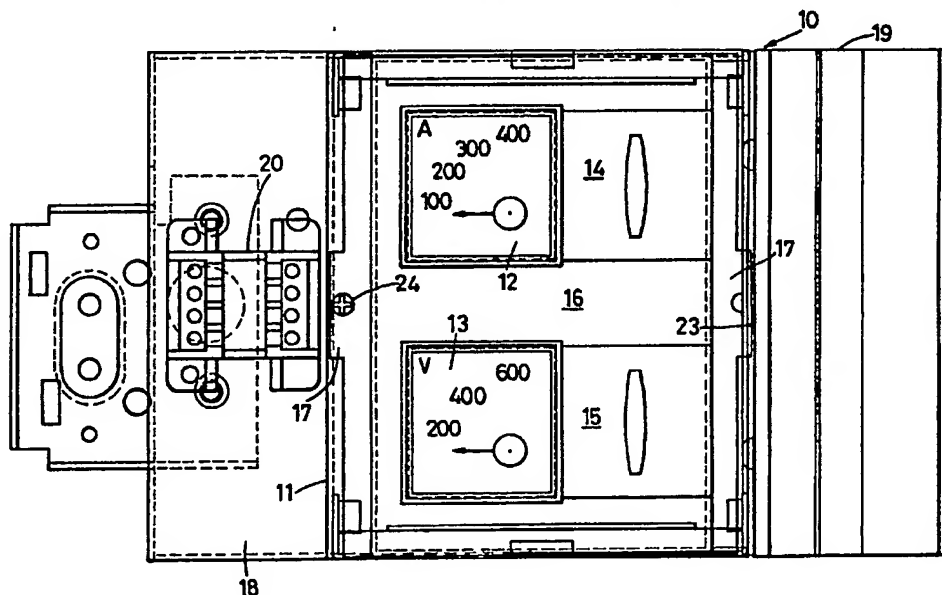


Fig. 1

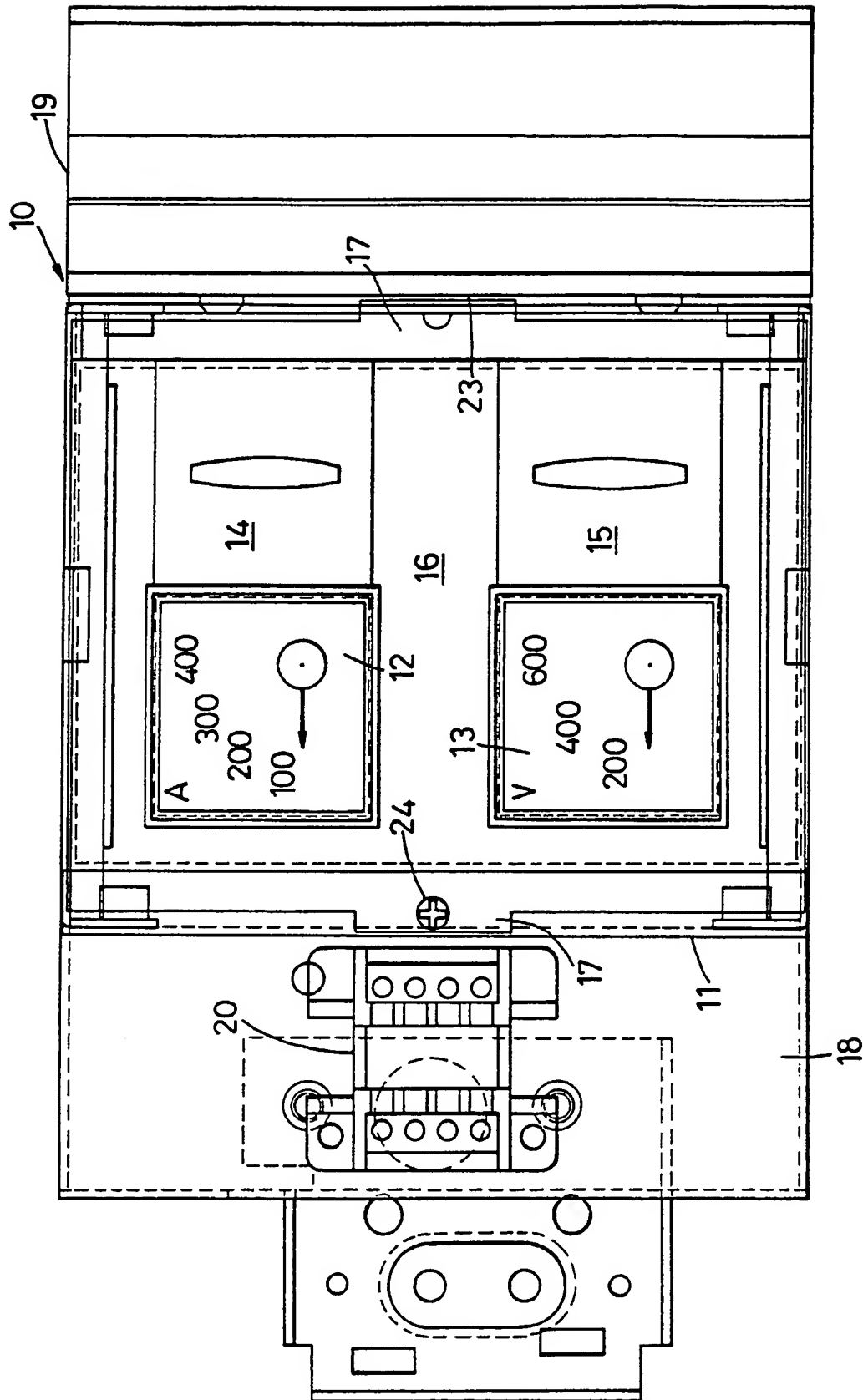
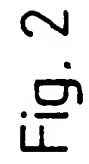


Fig. 1



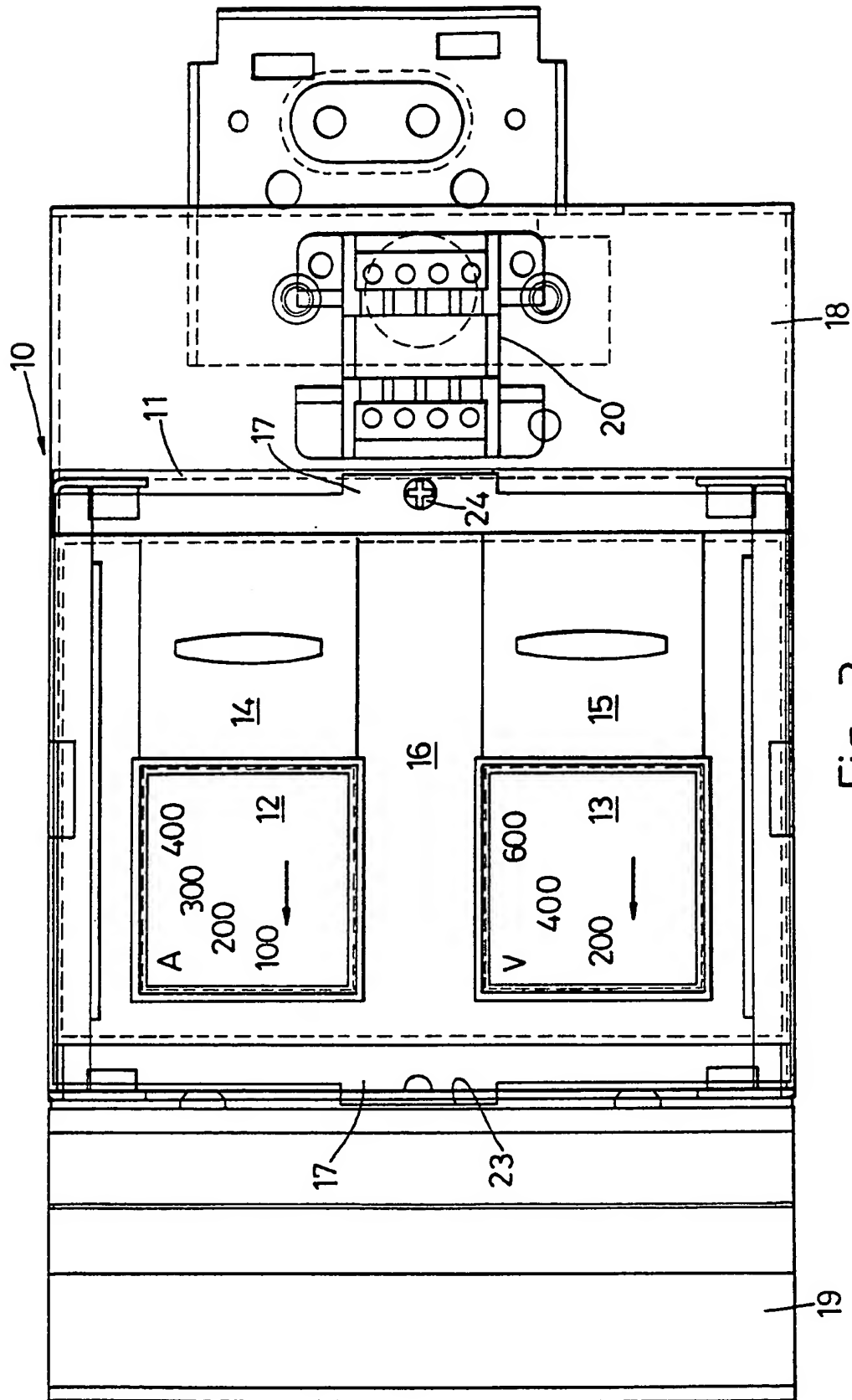


Fig. 3

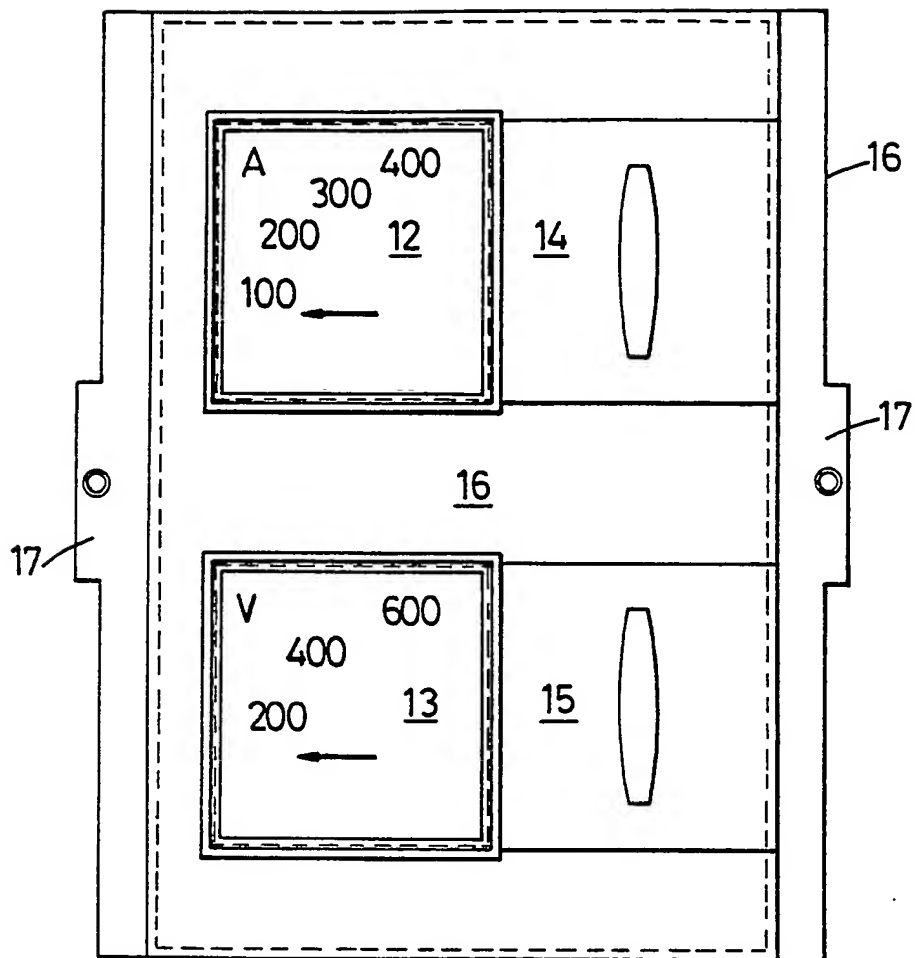


Fig. 4

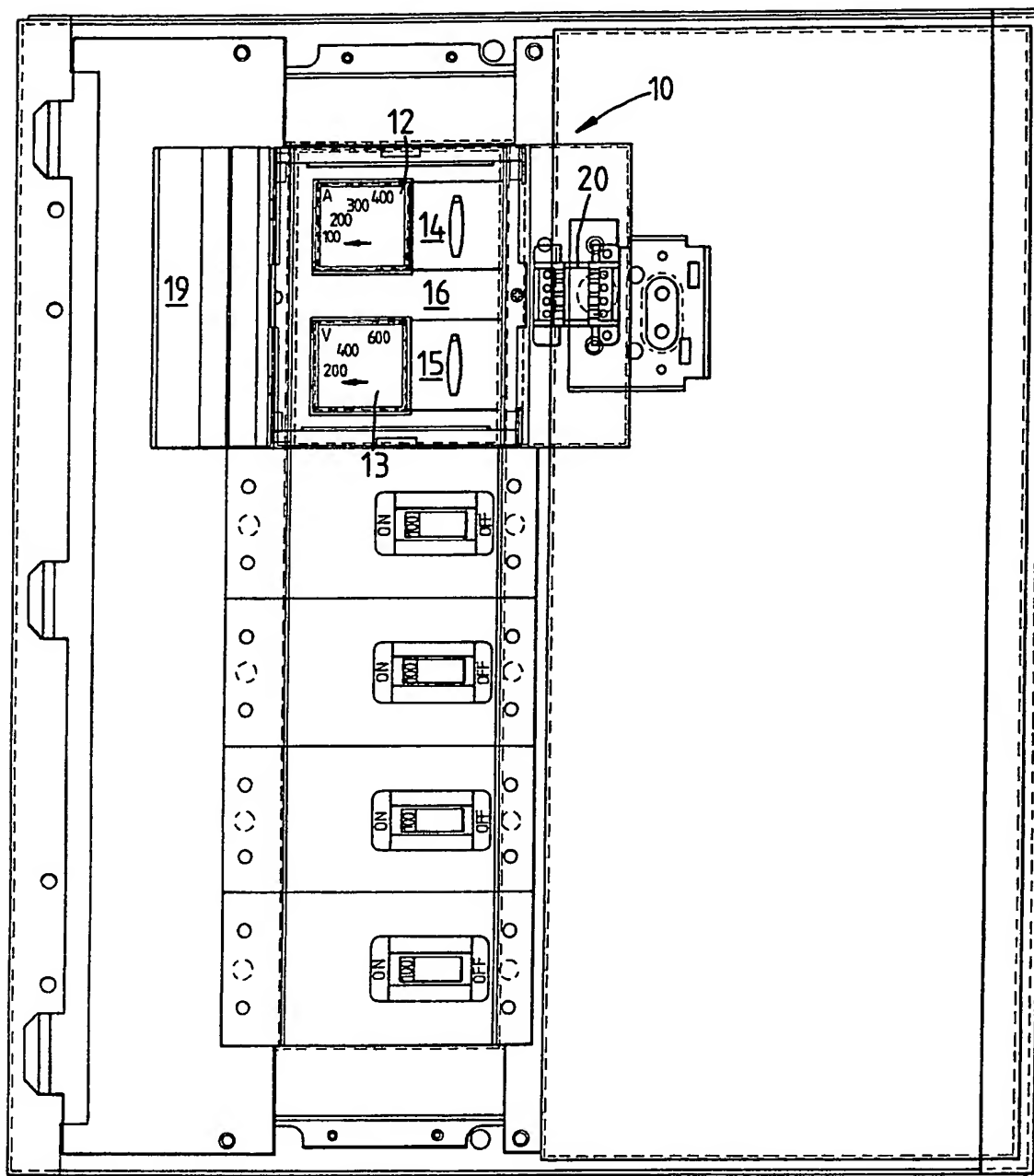


Fig. 5

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METERING UNIT FOR PANELBOARDS

The invention relates to metering units for use in panelboards for industrial applications.

5 Present industrial power systems can include circuit breakers or fuse switch units which may be plugged onto the busbars of panelboards as disclosed in UK Patents Nos. 1,161,030 and 1,181,893 and in USA Patent No. 5,148,139.

10 An object of the present invention is to provide a metering unit which can be plugged onto the busbars of panel boards.

15 According to the present invention there is provided a metering unit comprising a current meter, a voltmeter and respective switches connected thereto, all accommodated within a housing having plug-on connector members located at one side thereof connected to the voltmeter via its associated switch and a terminal block located at the other side thereof connected to the current meter via its associated switch.

20 The current meter and the voltmeter may be located one above the other, each associated switch being located to one side thereof, the arrangement being such that the plug-on connector members and terminal block can be mounted to alternative opposed sides thereof.

25 The housing may be provided with a separable front panel located over and carrying the meters and switches, a protrusion being provided on each of opposed sides thereof and one being located in a slot in the housing depending upon the arrangement of the plug-on connector members and terminal block and the other being attached to the housing by a screw.

30 The slot in the housing may be formed at the side thereof at which the plug-on connector members are located.

35

The foregoing and further features of the invention may be more readily understood from the following description of the a preferred embodiment thereof, by way of example, with reference to the
5 accompanying drawings, in which:-

Fig. 1 is a front elevational view of a metering unit;

Fig. 2 is a plan sectional view of the metering unit of Fig. 1;

10 Fig. 3 is a front elevational view of the metering unit of Fig. 1, but reverse hand;

Fig. 4 is a front elevational view of a front panel for the metering unit, and

15 Fig. 5 is a front elevational view of a panelboard including a metering unit of Fig. 3.

Referring now to Figs 1 to 4 of the drawings there is shown a metering unit 10 which comprises a housing 11 accommodating a current meter 12, a voltmeter 13 and respective switches 14 and 15 therefor, all of which
20 are carried on a front panel 16, having a protrusion 17 formed at each side thereof.

The housing 11 comprises a generally rectangular box-form structure carried on a mounting assembly 18. A plug-on connector member assembly 19 is attached to
25 one side of housing 11 and a terminal block 20 is located on mounting assembly 18 at the other side of housing 11.

Electrical connection leads 21 are provided to connect the current meter 12 via its associated switch
30 14 to terminal block 20 and electrical connection leads 22 are provided to connect the voltmeter 13 via its associated switch 15 to the plug-on connector member assembly 19, all as shown in Fig. 2.

35 Figs. 1 and 2 show the metering unit 10 for use in a panelboard where the busbars thereof are located on

the right hand side when viewed from the front. With this arrangement the protrusion 17 of the front panel 16 adjacent switches 14 and 15 is located in a slot 23 formed in housing 11 adjacent the assembly 19 and the other side of panel 16 is attached to housing 11 by a screw 24.

Fig. 3 shows the metering unit 10 for use in a panelboard where the busbars thereof are located on the left hand side when viewed from the front. With this arrangement the protrusion 17 of the front panel 16 adjacent meters 12 and 13 is located in the slot 23 and the side of the panel 16 adjacent switches 14 and 15 is attached to housing 11 by screw 24.

The connection leads 21 and 22 are of sufficient length to extend to assembly 19 or terminal block 20 for each alternative arrangement of panel 16.

Fig. 5 shows a front elevational view of a panelboard with a metering unit 10, as shown in Fig. 3, located thereon.

Hence the arrangement shown provides a metering unit which is plug-on to busbars in a panelboard and can be utilised with minimum modification for both left and right hand arrangements of busbars.

CLAIMS:

1. A metering unit comprising a current meter, a voltmeter and respective switches connected thereto, all accommodated within a housing having plug-on connector members located at one side thereof connected to the voltmeter via its associated switch and a terminal block located at the other side thereof connected to the current meter via its associated switch.

2. A metering unit as claimed in claim 1 wherein the current meter and the voltmeter are located one above the other, each associated switch being located to one side thereof, the arrangement being such that the plug-on connector members and terminal block can be mounted to alternative opposed sides thereof.

3. A metering unit as claimed in claim 2 wherein the housing is provided with a separable front panel located over and carrying the meters and switches, a protrusion being provided on each of opposed sides thereof and one being located in a slot in the housing depending upon the arrangement of the plug-on connector members and terminal block and the other being attached to the housing by a screw.

4. A metering unit as claimed in claim 3 wherein said slot in the housing is formed at the side thereof at which the plug-on connector members are located.

5. A metering unit substantially as hereinbefore described with reference to Figs 1 to 4 of the accompanying drawings.

6. A panelboard including a metering unit as claimed in any preceding claim.

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(the Search report)

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Relevant Technical Fields

(i) UK Cl (Ed.M) H1R - RBG, RBW, RBX

(ii) Int Cl (Ed.5) H05K - 5/02

Search Examiner
S DAVIES

Date of completion of Search
26 JANUARY 1994

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE WPI

Documents considered relevant following a search in respect of Claims :-
ALL

Categories of documents

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| <p>X: Document indicating lack of novelty or of inventive step.</p> <p>Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p>A: Document indicating technological background and/or state of the art.</p> | <p>P: Document published on or after the declared priority date but before the filing date of the present application.</p> <p>E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p>&: Member of the same patent family; corresponding document.</p> |
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Category	Identity of document and relevant passages	Relevant to claim(s)
	NONE	

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